



**BusWorks® 900EN Series
10/100 Mbps Industrial Ethernet I/O Modules**

APPLICATION NOTE

**Communicating to Acromag Series
NT2000, 9xxEN-6xxx and XTxxx2-xxx
Ethernet Modules with an Allen Bradley
ControlLogix System**

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OBJECTIVE

This document illustrates a procedure for integrating the Acromag Series 9xxEN-6xxx, XTxxx2, and NT2000 modules into an Allen Bradley control system as a third-party *generic* module. The reference model for this example is a Model 961EN-6006 Ethernet module and the others will be similar. It is assumed that the Acromag module has been assigned a static IP address and is connected to the Control Logix Ethernet port.

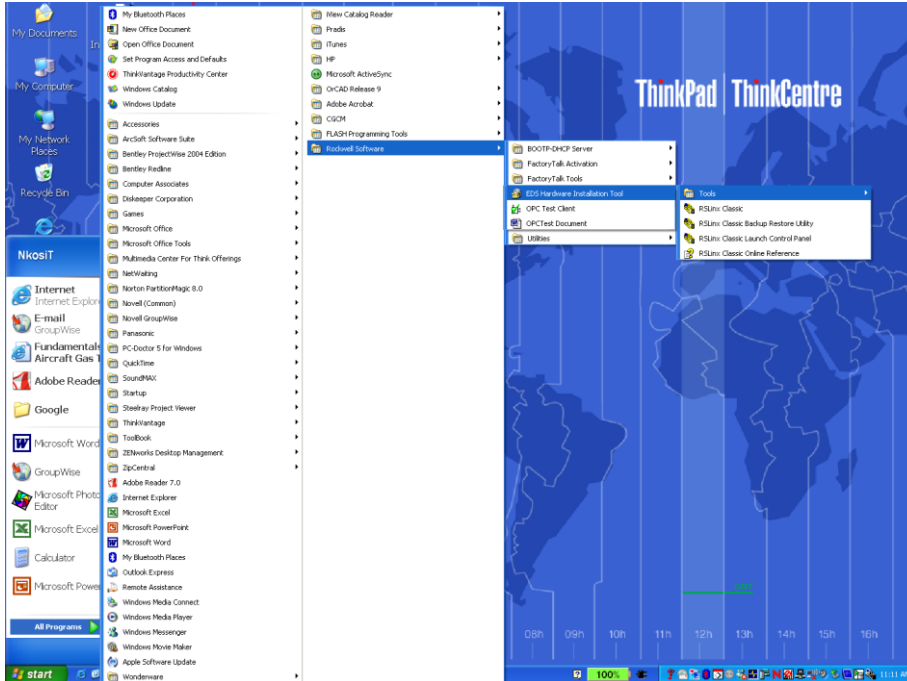
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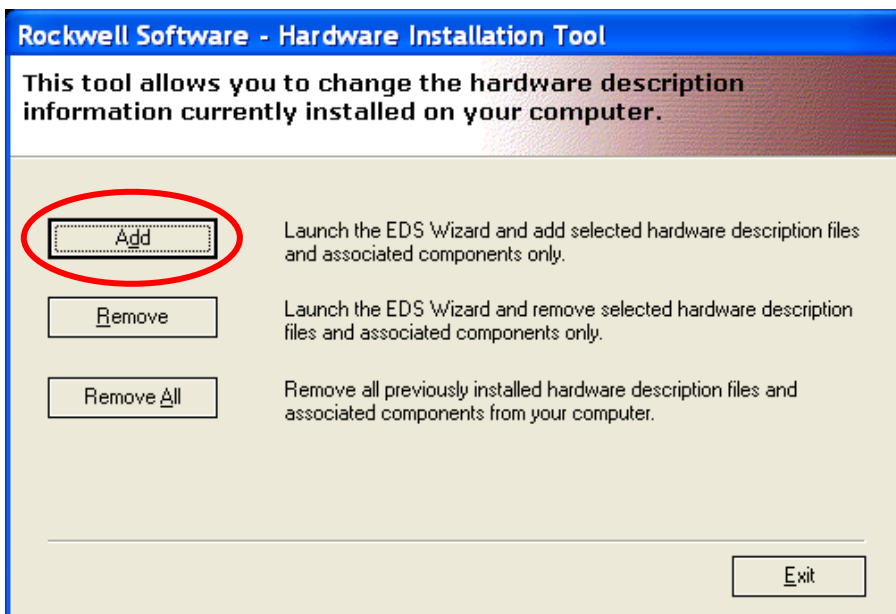


Installing EDS Hardware in Rockwell Software

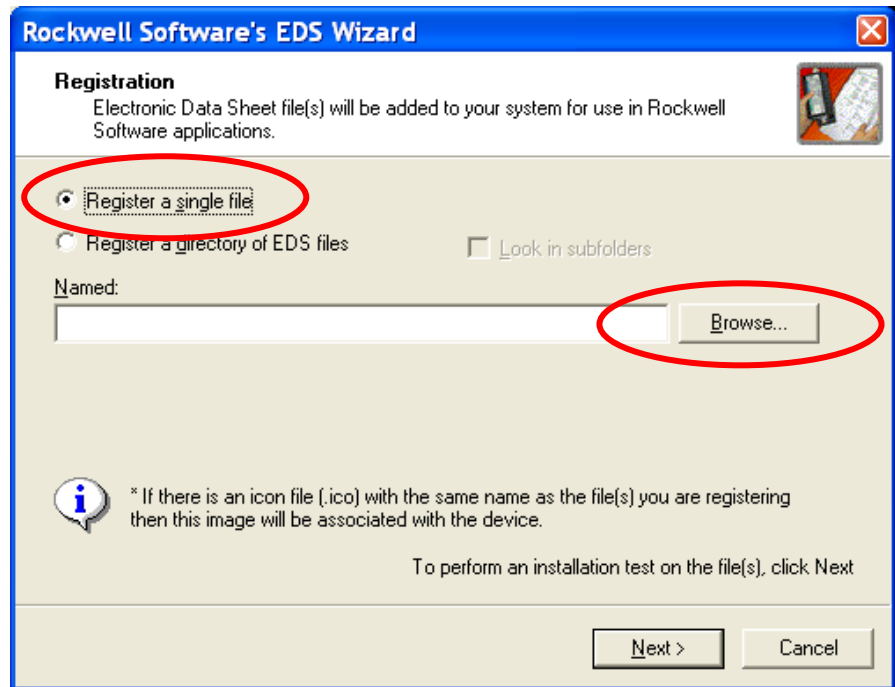
1. Shutdown RSLinx Classic Communications Service to be able to load the EDS file supplied for the interface of the Acromag module.

Start the EDS hardware installation wizard to initiate the EDS loading process by opening the tool as shown in the following path: **Start > Rockwell Software > RSLinx > Tools > EDS Hardware Installation Tool.**

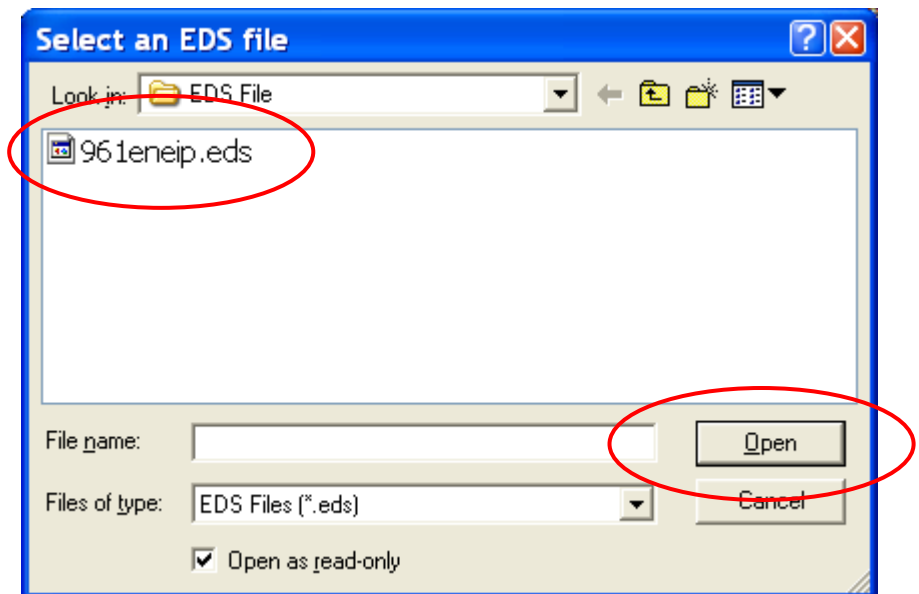
2. The wizard will start and the following window will popup, Click on the **Add** button to load the Acromag EDS file, as shown below.

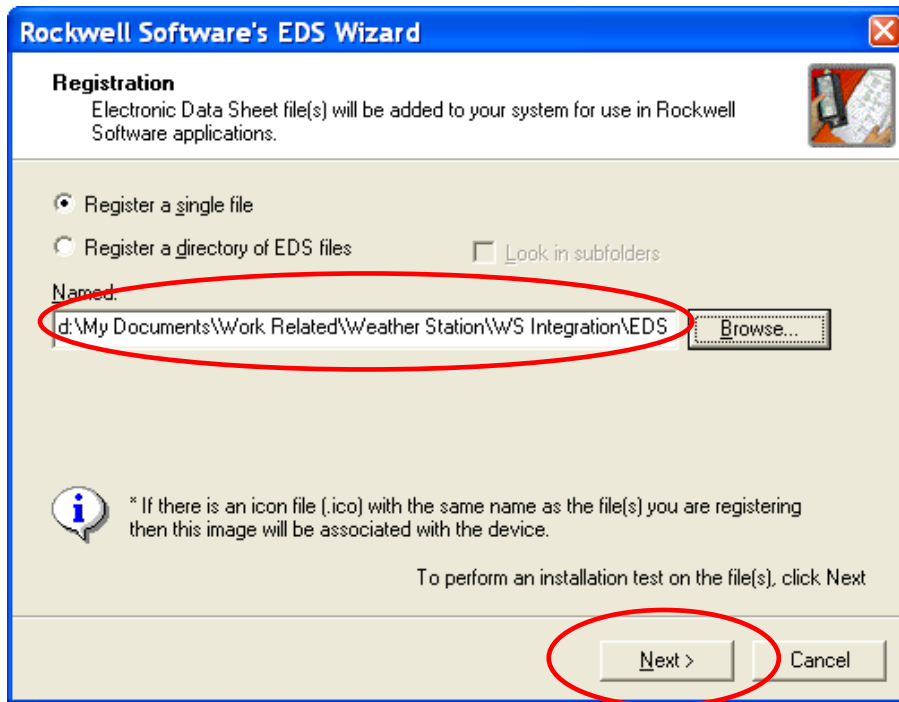


3. Select the '**Register a single file**' option and click on the **Browse** button to locate the stored EDS file in the local hard drive.

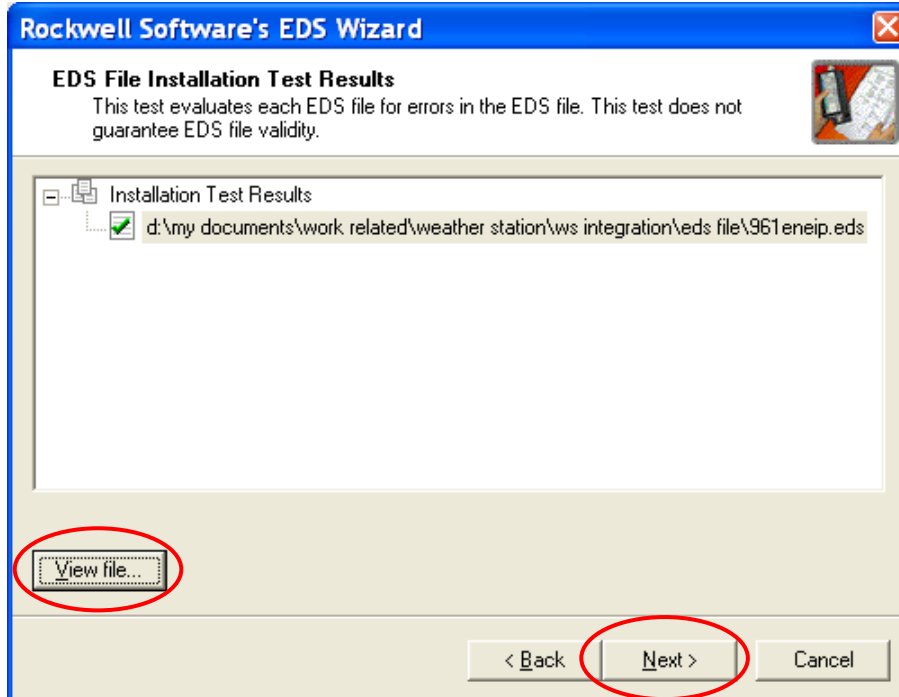


4. The stored EDS file will be listed from its directory, select the **EDS** file and click on **Open**.



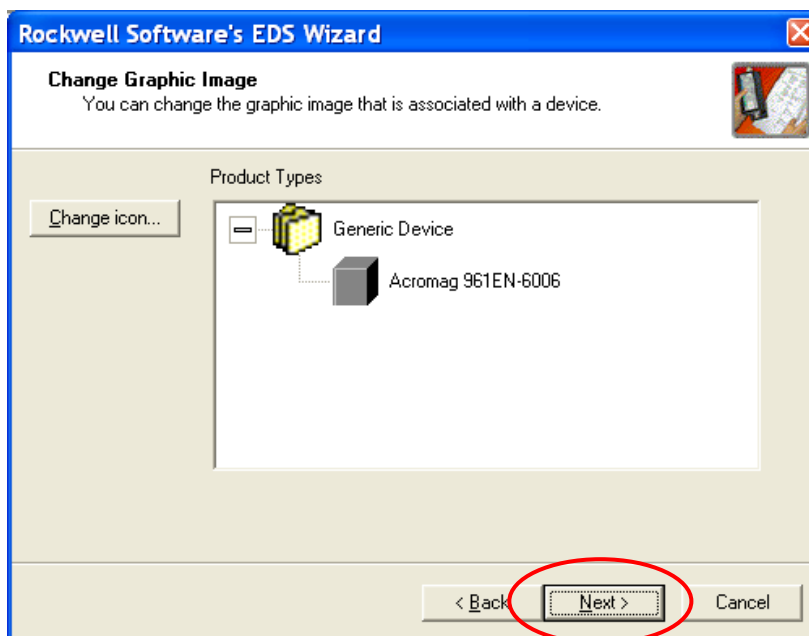


5. Once the storage location path of the EDS file is entered, click on the **next** button to continue with the registration process.

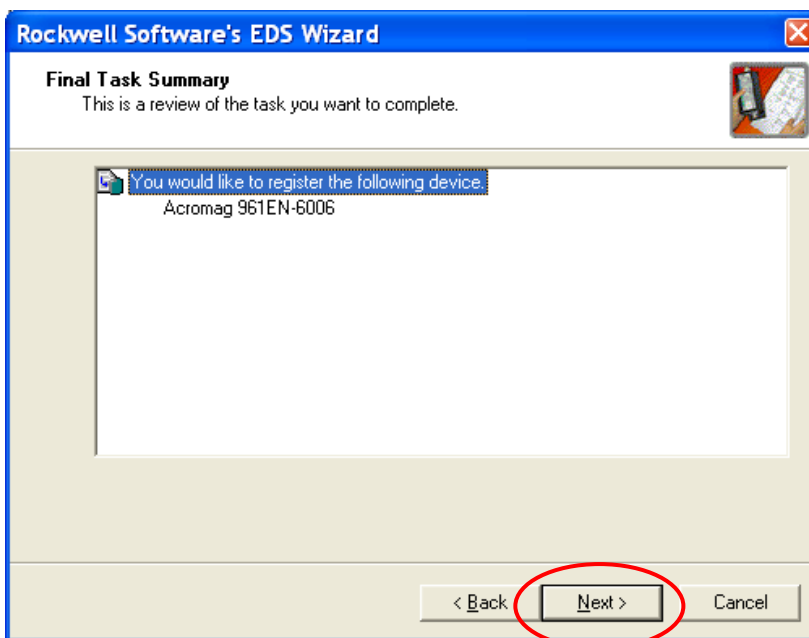


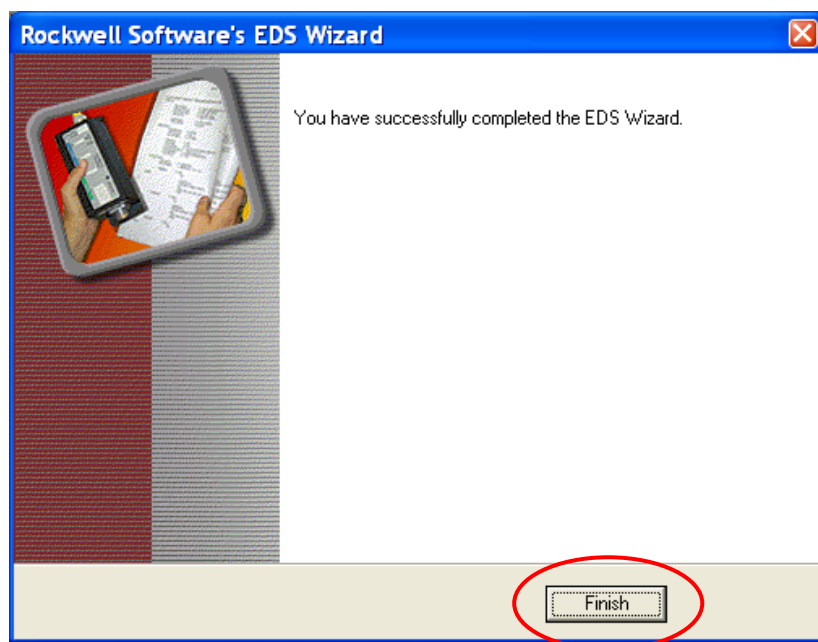
6. The RSLinx Classic Communications Service software will evaluate the selected EDS file for errors and a green tick alongside the file name will indicate if the file is free from errors. A complete file with all the details of the Acromag module as read by the Allen Bradley Control Logix Control System, can be viewed by clicking on the **View file** tab as shown below, otherwise click on the **Next** button to proceed.

7. At this stage, the RSLinx Classic Communications Services software recognizes the Acromag module and is ready to feed its data to the Control Logix control system, click on **Next** to proceed with the installation.



8. The RSLinx Classic Communications Services software is now ready to register the Acromag module in its library, click on the **Next** button to finalize the registration process.



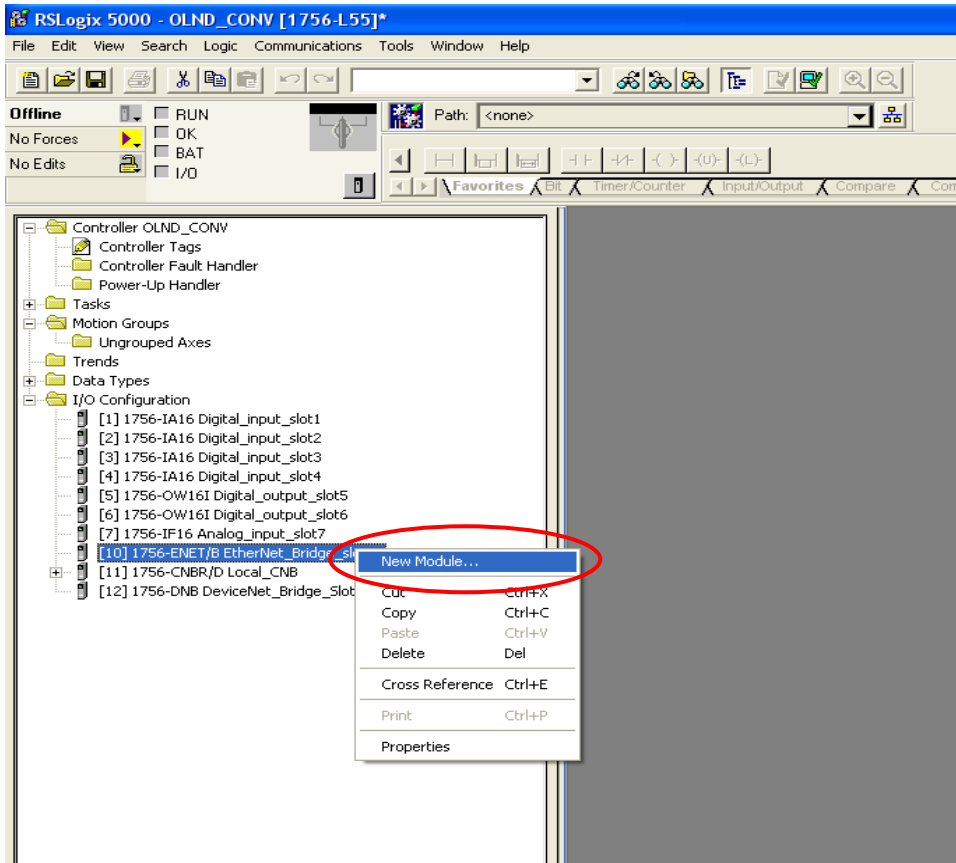


9. The Acromag module's EDS file is now loaded and registered in the RSLinx Classic Communications Services software, and this hardware can now be recognized by the Allen Bradley Control Logix control system. Click on **Finish** to exit the wizard.

Communicating with the Acromag Module

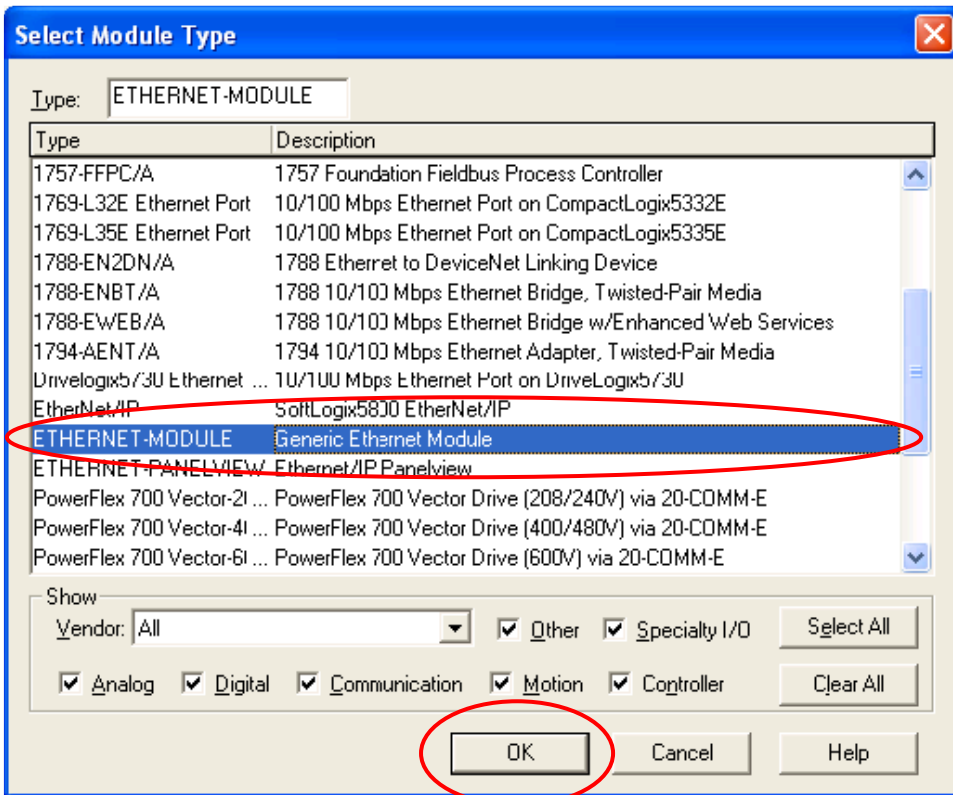
Restart the RSLinx Classic Communications Services software as a service and proceed to the RSLogix 5000 projects to interface the Acromag module. Switch the Central Processing Unit to program mode to be able to configure and download any changes.

The Ethernet communication module in the PLC rack is already configured in the RSLinx Classic Communications Services for it to serve as a possible gateway into the Ethernet/IP Local Area Network, when performing step 10 below, ensure that the IP address already assigned to the module is the same one used when adding the module into the I/O configuration.



10. Add the Ethernet Communications Module (1756-ENET/B) into the respective I/O configuration as you normally would, and assign all required parameters, set the module to be rack optimized.

- Right click on the backplane and select **new module**.
- Select the specific Ethernet communication module from the list provided.
- Set all network parameters in the module properties and set the module to be rack optimized.



11. Add the third-party generic Ethernet module into the I/O configuration as shown below.

- Right click on the Ethernet communication module (1756-ENET/B) that was added in step 11 and select **new module**.

12. In the **Select Module Type** Box, select **ETHERNET- MODULE (Generic Ethernet Module)** as shown in the example below and click OK.

13. The **Module Properties** window should automatically open. Under the **Name** box, type in the name of the module. The type of **Communication** Format used by all modules is **Data – INT**. Please note that once the **Finish** box is pressed, the Communication format of the module cannot be changed.

- 14.
- Under the **Address / Host Name** box, the **IP Address** already assigned to the Acromag module should be typed in.
 - The size of each instance is found in the Acromag user manual under the Assembly Object.
 - In the **Connection Parameters** box, fill in the data boxes with the selected Acromag module's values obtained from the Assembly Object.
 - The **Input Instance** is 100, the **Output Instance** is 112, and the **Configuration Instance** is 128.
**Configuration Assembly Instance = 128 with Size = 0 for all 9xxEN-6xxx Modules.*
 - When all data is entered and correct, click on the **Finish>>** button.

Size varies based on the selected Acromag Module. For our selected example Acromag module 961EN – 6006, the final configuration of the module should look like this example, as shown in the following window.

Connection Parameters for All 9xxEN-6xxx Modules

Module Type	Comm Format	Input Assembly Instance	Input Size	Output Assembly Instance	Output Size
981/2/3EN-6012	Data-INT	100	1	112	1
961/2EN-6006	Data-INT	100	6	112	3
963/4EN-6012	Data-INT	100	12	112	3
965EN-6004	Data-INT	100	4	112	5
965EN-6006	Data-INT	100	6	112	5
966EN-6004	Data-INT	100	4	112	3
966EN-6006	Data-INT	100	6	112	3
972/3EN-6004	Data-INT	100	1	112	7
972/3EN-6006	Data-INT	100	1	112	9
951/2EN-6012	Data-INT	100	5	112	9
XT11x2	Data-INT	101	5	100	4
XT1212/XT1222	Input Data-INT-Run/Program	101	9	100	NA
XT1232/XT1242	Input Data-INT-Run/Program	101	17	100	NA
XT1532	Data-INT	101	2	100	5
XT1542	Data-INT	101	2	100	9
NTE2xxx	Data-INT	101	164	100	68

Use the table at left or the Assembly Object noted in the manual to fill out the Comm Format and Connection Parameters.

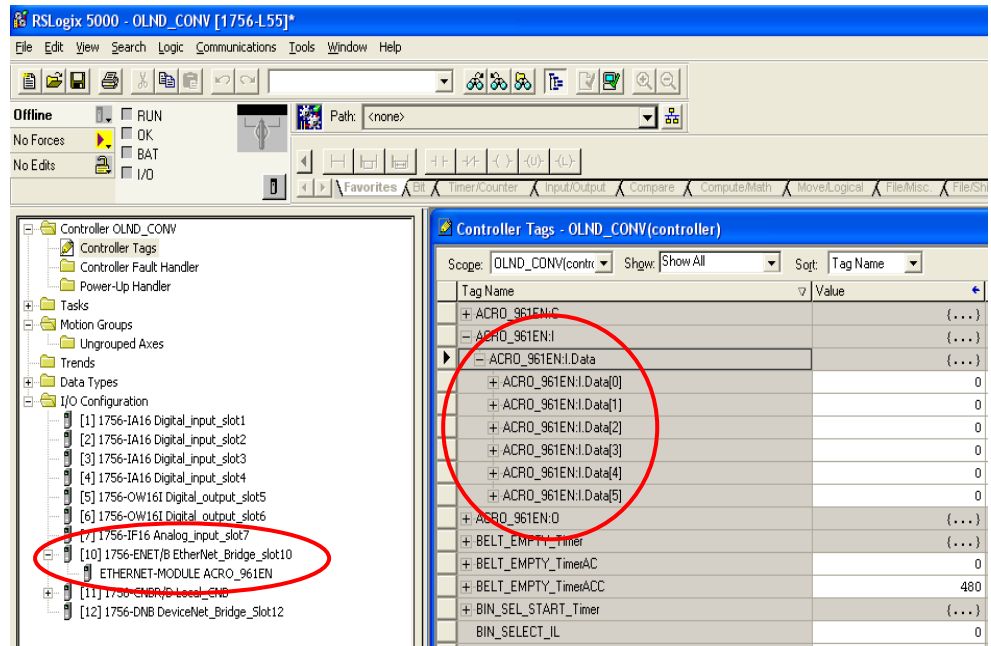
When all data is entered correctly, click the **[Finish]** button.

* Configuration Assembly Instance =128 with Size =0 for all modules.

Note: If you encounter frequent communication errors or communication dropouts, consult the BusWorks Manual for the Input Conversion Rate or Output Update Rate and adjust your PLC's RPI rate as required. Some units, in particular Temperature Modules, may take up to 480ms to process the inputs periodically, plus another 240ms for Cold Junction Compensation before RPI's can be accommodated. In this case, an increased RPI of 1000ms may be required to solve the problem.

15.

- a) The RSLogix 5000 program will recognize the configured third-party module and automatically create the Acromag module Tag Structure in the Controller Tags window as shown at right.
- b) Download the project to the Control Logix 5555 Controller and switch to RUN mode.
- c) Double-click on **Controller Tags**. On the bottom of the Controller Tags window, click on the tab labeled **Monitor Tags**.
- d) To read the Analog Input Data, expand the **ACRO_961EN:I** and then the **ACRO_961EN:I.data** tag.
- e) When the CPU is in RUN mode, the input data will be continuously updated.



Note that the Acromag Module's data acquired is now available to only one controller, if that data is required by other controllers, two options are available to achieve that as follows:

1. Perform the same RSLogix 5000 configuration and programming to all other controllers and the exercise should be similar except for the controller tag configuration for SCADA and data logging purposes.
2. On controllers that are on the same rack, create a produced tag aliased to the Acromag module tag on one of the controllers and create consumed tags on the others to share the acquired data.

NOTES: